

1. (twice amended) A method for cleaning one or more membranes normally immersed in water containing solids and used to produce a filtered permeate comprising:

performing at least once a week the steps of:

(a) stopping permeation;

(b) flowing a selected concentration of a chemical cleaner through the membranes in a direction opposite to the direction in which permeate normally passes through the membranes to provide chemical cleaner in an area in or adjacent the membranes for a selected duration; and,

(c) resuming permeation,

wherein

(d) the sum of the products of the concentrations of the chemical cleaner expressed as an equivalent concentration of NaOCl in cleaning efficacy and the durations of all of the steps of flowing a selected concentration of a chemical cleaner through the membranes in a direction opposite to the direction in which permeate normally passes through the membranes to provide chemical cleaner in an area in or adjacent the membranes for a selected duration in a week is between 2,000 minutes•mg/L and 30,000 minutes•mg/L; and,

(e) wherein the selected concentration, selected duration and sum of the products are selected to maintain a stable permeability or reduce the rate of decline in permeability of the membranes over extended periods of time.

27. (amended) A method for cleaning one or more membranes normally immersed in water containing solids and used to produce a filtered permeate comprising:

(A) performing recovery cleanings of the membranes from time to time, the recovery cleanings being at least 15 days apart from each other; and,

(B) between recovery cleanings, performing at least once a week the steps of:

(a) stopping permeation;

(b) flowing a selected concentration of a chemical cleaner through the membranes in a direction opposite to the direction in which permeate normally passes through the membranes to provide chemical cleaner in an area in or adjacent the membranes for a selected duration; and,

(c) resuming permeation,
wherein

(d) the selected concentration of chemical cleaner is between about 20 mg/L and about 200 mg/L of chemical cleaner expressed as an equivalent concentration of NaOCl in cleaning efficacy;

(e) the selected duration is between about 10 minutes and about 100 minutes; and,

(f) the sum of the products of the concentrations of the chemical cleaner expressed as an equivalent concentration of NaOCl in cleaning efficacy and the durations of all of the steps of flowing a selected concentration of a chemical cleaner through the membranes in a direction opposite to the direction in which permeate normally passes through the membranes to provide chemical cleaner in an area in or adjacent the membranes for a selected duration in a week is between 2,000 minutes•mg/L and 30,000 minutes•mg/L.

32 (new) The method of claim 1 wherein the extended periods of time are at least 15 days in length.

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33 (new) The method of claim 27 wherein the decrease in the permeability of the membranes between performances of steps (a), (b) and (c) is at least as great as any increase in the permeability of the membranes after a performance of steps (a), (b) and (c).

REMARKS / ARGUMENTS